

ELECTRONIC HYBRIDIZATION ASSAY AND
SEQUENCE ANALYSIS

ABSTRACT OF THE DISCLOSURE

5 An electronic hybridization assay implements a hybridization reaction, or a
sequence analysis, on sequences representative of the sequences of the molecules under
examination to provide an output representative of a chemical hybridization reaction. An
electronic hybridization machine implements a correlation algorithm where the
correlation output provides information regarding the relationship between the molecules
10 under examination. In one aspect, the degree of similarity between the molecules is
indicated by the correlation output value. In another aspect, a locus of similarity between
the molecules is indicated by a maximum value in the correlation output sequence. In a
particular aspect, the sequences are encoded in an optimized format to optimize the
operation of the operation of the electronic hybridization machine.